

LETTERS

Tanks Continue to Define the Future of Land Power

Dear Sir:

On December 1, 1862, in the midst of the greatest crisis the republic had ever faced, President Abraham Lincoln delivered a stirring second annual message to Congress. Embedded in that message was an insight about nationhood that modern leaders would do well to remember: "A nation may be said to consist of its territory, its people, and its laws; the territory is the only part which is of certain durability."

Lincoln knew that without secure territory no nation could exist, and that contests over land would largely determine the political and economic potential of a state. Any movement or force that could successfully occupy, control, and defend land had earned the right to call itself a nation, and Lincoln was determined to deny that right to the Confederacy.

Since Lincoln's time, every major conflict in which the United States has engaged has been, fundamentally, about the control of land. Whatever may have been the pretensions of the various imperialists, fascists and communists whom America has faced on the field of battle, in the end it was control of land, rather than ideas or aspirations, that decided who was victorious.

This is a lesson easily overlooked by a nation that, in John Spanier's phrase, is blessed with "nonthreatening neighbors to the north and south, and fish to the east and west." Having never (permanently) lost national territory to an aggressor, Americans are less aware than most people that war is mostly about land. But the historical record is remarkably clear, from Hitler's invasion of Poland to Stalin's occupation of Eastern Europe to Saddam Hussein's attempt to annex Kuwait.

Which brings me to the subject of tanks. Armored vehicles first emerged in World War I as a way of taking ground that seemed impenetrably well-defended. After the war, it became received wisdom that tanks were essential to the occupation and control of contested territory, a view reinforced by the rapidity with which German armor swept across Europe in the 1940s. Much of U.S. defense spending and planning during the Cold War was aimed at preventing the Soviet Union from using its massive tank armies to similar effect.

But after the Cold War the prevailing wisdom changed. It is now fashionable in intellectual circles to regard any weapon with heavy metal content as a dinosaur, an anachronism with little relevance to future security requirements. The assumption is that sophisticated sensors, smart munitions, and other high-tech spinoffs of the

computer age will win future wars, rendering most traditional weapons impotent.

Would that it were so. The simple truth is that after nearly a century of refinements in the tools of land warfare, tanks remain the only practical method of seizing, securing and protecting territory against a capable adversary. Most of the high tech weapons in the Pentagon's R&D budget will be phenomenally effective at denying enemies the use of land, but are not designed for establishing positive control of the land.

When it comes to controlling land, there is no substitute for being there. But being there can be extremely dangerous unless one has adequate protection, reasonable mobility, and sufficient firepower to deal with rivals who don't want you there. And since they, too, are likely to have high tech weapons in the future, nothing less than a main battle tank will provide the requisite level of survivability and lethality.

The good news is that today, for the first time in history, America leads the world in heavy armored vehicle technology. The bad news is that the rest of the world has decided it, too, wants modern tanks, so, in the words of Lewis Carroll's hare, America will need to run as fast as it can just to stay where it is — in the lead.

That does not mean the nation needs a new tank. Not yet anyway. But it does mean that it needs to upgrade at least a fraction of the tanks it has already bought. In particular, it needs to modernize the M1 tanks purchased in the early 1980s that no longer are capable of matching the performance of foreign tanks. The nation has made a major investment in these vehicles, but without better guns, armor, communications, and defenses it would not be wise to field them against a capable adversary.

This requirement could wait if Russia and America's Cold War allies were the only countries building and operating modern tanks. But other countries are, too, and most of the producers of new tanks are also exporting them to non-producing countries. In addition, the proliferation of sophisticated dual-use technologies has enabled less affluent countries to incorporate the latest technologies into existing tanks for a fraction of the cost of buying new tanks.

A cursory review of recent history suggests that, sometime soon, the U.S. will again face a determined adversary somewhere in Eurasia. When that day comes, U.S. victory will probably require the occupation and control of hostile territory. Modernizing the current inventory of tanks at a reasonable rate is the most cost-effective way of assuring our capacity to prevail.

LTG DON PIHL, USA, Ret.

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- Ed.

M113 Is the Logical Choice For Contingency Operations

Dear Sir:

Having only recently read Mike Sparks' excellent article from the January-February issue of *ARMOR*, "M113s Maximize Mechanized Infantry Mobility and Firepower in Contingency Ops," I felt compelled to write.

I am a tank company commander at Ft. Lewis, Wash. My company recently participated in a light-heavy rotation at the JRTC with a brigade of the 101st Airborne in which we simulated a task force that had been inserted between two sovereign nations in a peacekeeping/peacemaking (PKO/PMO) scenario. Similar scenarios have been run for several years at the CMTC, so many of my fellow armor officers are familiar with the challenges of PKO/PMO. However, relatively few armor officers are afforded the opportunity to train with light infantry, as opposed to mech infantry, in such a scenario, and I believe that the JRTC rotation and its associated train-up gives me a unique perspective on this aspect of joint operations. With that, I'd like to comment on some of Mr. Sparks' points.

First, Mr. Sparks makes a strong, objective case for retaining the M113A3 over the Bradley for use in contingency operations, covering almost every possible consideration for an armored vehicle, from strategic mobility to fuel consumption. I heartily agree with Mr. Sparks that the M113A3 is simply the better vehicle when employed in the peacekeeping/peacemaking role, and that whatever marginal advantage that the Bradley enjoys in the way of firepower and armor protection is overkill anyway. To Mr. Sparks' litany of advantages in using the M113A3, I would add ease of maintenance and accessibility of repair parts, given that the M113 is one of the most-produced and widely-used armored vehicles in the world. In a scenario involving large formations of armor, where the ability to keep up with the M1A1, fire on the move, and engage tanks and APCs at 3000+ meters is critical, the Bradley is no doubt the infantryman's weapon of choice. However, in the non-linear peacekeeping/peacemaking operations in which we are most likely to be involved in the near future, where guerrillas and mines are the primary killers on the battlefield, the M113, with its maneuverability, large carrying capacity, and entirely adequate armor and armament, is the logical choice.

Second, Mr. Sparks recommends that mechanized infantrymen wear body armor during training. I couldn't agree more. We

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must force our infantrymen to use the assets they will have while in combat. Some will say that the use of body armor causes heat injuries and joint stress. I believe that attention to water consumption and common sense will prevent the former, and the latter is simply a cost of doing business. Body armor is heavy, bulky, and irritating to wear, but it is an asset we should train with.

Third, Mr. Sparks spends no small amount of time lamenting the 'laziness' of mechanized infantry soldiers. While I hesitate to use the word 'lazy,' I have to agree with his point. During my training and rotation with the two Bradley-mounted mech infantry platoons that were attached to my company, I found that the infantry soldiers generally considered themselves to be mini-tankers, with all the associated reluctance to get off of their vehicles. I noticed two quirks in particular: First, the crews of the Bradleys and the dismounts that ride in them are two separate entities, with essentially separate chains of command within the platoon. I found that the dismounts regarded the Bradley as little more than a big taxi and gear-carrying platform, while the crews considered the dismounts to be a nuisance that must be tolerated while stalking the big payoff of enemy vehicles. Second, I found that for some reason, mech infantry platoon leaders generally refused to dismount with their squads, electing to stay mounted while the dismounts ran out to do their thing. Perhaps they believed that their place was with the greatest firepower, and perhaps in the European/desert scenarios for which we've all been training the last forty years, that's true. It is certainly *not* true in a PKO/PMO scenario, though, where the men in the back of the Bradley are more important than the weapons on the vehicle. At the JRTC, my company was repeatedly praised because the mech infantrymen actually dismounted and did 'infantry things.' That this could be a compliment, instead of an expectation, indicates the skewed thinking of some Bradley-mounted mech infantrymen.

Also, Mr. Sparks advocates that all infantrymen, mech infantrymen included, be trained to the same standard and be afforded their share of 'Hooah' badges. He also talks of allowing units to develop their own 'high-speed' identities, to use his terminology. He insinuates that the philosophy in our Army that we are all the same, and that displays of elitism are dangerous is foolish, at best. Again, I have to agree with him. Outside of the few units where elitism is encouraged — 82d, 101st, Special Forces — my experience is that soldiers believe that one unit is just like the next. I can't imagine that allowing mechanized infantry units to develop elite identities, complete with accoutrements like berets and badges, could be anything but good.

Mr. Sparks' article was apparently intended to champion the cause of a weapon system. I support wholeheartedly his as-

essment that the M113A3 is superior to the Bradley in a PKO/PMO scenario. The article struck chords with me in several other areas, though, and I think that we as tankers should be intimately familiar with the soldiers with whom we will fight should we be sent to Bosnia, Somalia, or any number of other places where dismounted infantry reigns supreme. In such places, we tankers are more likely to man a check-point or support a house-clearing operation than kill T72s at 3200 meters, and the training and capabilities of the infantrymen is more critical to our success than our own.

On one point, however, I have to disagree with Mr. Sparks. The M113 will always be the '113' or the 'PC.' We can rename it the *Gavin IFV* if we want, but the soldiers won't call it that any more than they call an M577 an 'Armored Command Post.' Let's not waste our time.

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CD ROMs Could Improve Vehicle Identification Skills

Dear Sir:

I enjoyed nearly every article in the May-June issue of *ARMOR*, especially "The Armored Fighting Vehicle Identification Trainer," written by Captains Mark Lee and Jeffrey Schamburg. The ability to distinguish friend from foe on the battlefield is absolutely critical, so critical that it demands from those who have responsibilities of training and leading tank units attention to improve or find new ways to train fighting vehicle identification.

In my opinion, an armored fighting vehicle identification trainer should have two different stages:

- 1) To reinforce the soldier's basic identification skills, such as "recognizing turret shapes, the location of the bore evacuator, and whether the vehicle's track is supported or non-supported." As the authors suggested, this could be done by using vehicles which are presented exactly as they are presented in current lessons plans and training manuals. But we should add another important matter, learning to identify a vehicle through its heat sources. Most of the target acquisitions are made by using thermal sights, so soldiers need to reinforce these specific skills. The other viable future extensions the authors presented for this trainer, for instance a black box that would conceal portions of the present vehicle, could also be used to train this specific skill.

- 2) To evaluate the level of each soldier through realistic situations. Here is where people should pay attention. All the situ-

ations (pictures, drawings, images made by computer) should be as close as possible to the situation seen through the tank optical sights. All the vehicles should appear in battle situations in distances above 900 meters. This stage also should include thermal images.

All this information and much more could be stored on a CD-ROM. Many images and pictures taken during DESERT STORM, or others from contemporary wars saved in many other files, could fit the available space of a CD-ROM. To get an idea of how powerful a CD-ROM can be, take a look inside a *Jane's* CD-ROM.

We live in a multimedia era where we can learn through an interactive way. The CD-ROM is the right tool. This way, we would have not only high quality pictures but also images to train to distinguish friend from foe. To reduce the number of fratricide victims is a good enough reason to invest in a new and high quality trainer.

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Author Seeks Hispanic Memoirs

Dear Sir:

I am seeking to correspond with Cuban-American veterans of the Vietnam War for a book on Hispanics who served in the war. The book will be based on first-person oral histories.

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River Crossing Doctrine?

Dear Sir:

I am a retired engineer officer who used to teach river crossing operations in the 'old' days. That was when the Engineer School was at Fort Belvoir. So, I read with interest the article "River Crossings" by CPT DeCarlo in the May-June 1995 issue. He pleads for the need for training for a deliberate river crossing. I cannot argue with the need for training. I do find, however, the doctrine in FM 90-13 somewhat archaic (the article has a typo on the FM number).

Both FM 90-13 and CPT DeCarlo describe a doctrine that ignores the deep battle aspect of AirLand Operations. The four phases describe a sequential and constrained land approach to battle dating back to the Active Defense doctrine. Since

when does the U.S. Army only attack the near shore, then the river, then the far shore, and finally the bridgehead line? The term "bridgehead line" symbolizes a concept that focuses on deliberately stopping the attack rather than exploiting success.

I think the problem stems from the definition of a deliberate attack. The article omits that a deliberate attack "...is generally conducted against a well-organized defense..." I contend that if you follow AirLand Operations, the enemy will no longer be well organized by the time you reach the river. The FM states that forces can use air assault infantry during phase 2 to seize the far bank. The FM introduces deep fires only in phase 3 when securing the far shore. AirLand Operations begins with deep fires and will always divert the enemy's attention from the proposed crossing sites. If commanders do not use air assault forces at the start, then some other maneuver diversion or a very successful air war will soften the area.

I contend that AirLand Operations will normally cross tanks over the river with a bridge, not rafts. Rafting is only a rarely-used, alternate option when plans go drastically astray. I believe the Army can still learn from WWII history. However, today's M1 tank can ford the Volturno River that CPT DeCarlo references without the help of engineer bridges.

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Train CCFs Long Distance With Video Teleconferencing

Dear Sir:

By the time this letter is printed, 1st Bde/2AD will be in the throes of conducting digital NET training. The infancy of digital warfighting is actually upon us.

That brings to mind training our "communicate" mission (as I alluded to in a letter printed in the May-June 1995 issue of *ARMOR*). After reading LTC Martin's article in that same issue, I believe commanders and their staffs need to train and retrain the Critical Combat Functions (CCFs) of the orders process, Troop Leading Procedures (TLPs), and battle/logistics tracking. Let me say it again...train and retrain, possibly as if a staff was in perpetual green cycle.

So, the question becomes how to train/retrain CCFs without the expense of putting an actual force in the field each time? Here is a possible solution with several additional benefits: long distance training between Ft. Hood units and Ft. Knox with the use of a twin task force [(T)TF]. It would work something like what is shown in Table 1 above.

Event	1 Bde/2AD Actions	1 Bde TF Actions	Ft. Knox Actions
1	1 Bde/2AD Orders Process	One Ft. Hood TF selected to CMD a (T)TF on a rotating basis	Ft. Knox (T)TF formation (from AOAC, AOBC, ANCOC, BNCOC & AIT)
2	1 Bde/2AD issues OPORD	All 1 Bde TFs receive mission	(T)TF conducts necessary training not previously completed
3		All 1 Bde TFs' orders process	(T)TF continues training/orients on simulator
4		Select TF OPORD brief to TF Cdrs [Ft. Hood] and (T)TF Cdrs [Ft. Knox via Video Tele Conf (VTC)]	(T)TF Cdrs (AOAC small group on a rotating basis) receives mission/(T)TF training cont
5			(T)TF Cdrs' orders process/training cont
6			(T)TF OPORD briefs to AOBC Plt Ldrs
7			(T)TF Plt TLPs/Plt OPORD brief to ANCOC PSGs and BNCOC TCS
8	1 Bde/2AD battle tracking	Select TF fights battle via VTC and remote digital links between Ft. Hood and Ft. Knox	(T)TF fights simulated battle with info feed from Ft. Knox and Ft. Hood

Table 1 - LDT Option

There are both advantages and disadvantages at work here. First the disadvantages:

1) Establishment of remote digital links. (VTC capability is already up.)

2) Some possible artificiality due to systems that are not fully operational (i.e., a constant VTC view of the SIMNET's AAR screen may have to suffice for battle tracking, and the SIMNET's Stealth machine for remotely piloted vehicles).

3) The short time frame. (Staffs need to train now and IVIS-capable simulators in SIMNET (D) are still not quite out of the developmental stage.)

4) We must undertake a complete overhaul of Ft. Knox AOAC, AOBC, ANCOC, BNCOC, and AIT training schedules to synchronize a "digital warrior week."

I believe the advantages, however, outweigh the disadvantages. Listed below, we can categorize them into three main training payoffs — CCF training, digital "warfighting" experience, and hands-on leaders' training:

1) Multiple iterations of staff training for 1 Bde/2AD units.

2) The cost trade-off of establishing VTC and remote digital links, versus putting units in the field.

3) Staff training has less of an impact on unit training schedules.

4) The digital warfighting experience (and TTPs) are spread throughout the Armor community.

5) AOAC officers have to stare new lieutenants in the eye and deliver company (team) OPORDs.

6) AOBC lieutenants have to stare ANCOC and BNCOC NCOs in the eye and deliver platoon OPORDs.

7) ANCOC/BNCOC NCOs have to command AIT EMs on their tank (simulator).

8) If BCVs/C²Vs are available at Ft. Knox, a (T)TF staff linked to the TF commander at Ft. Hood can fight the battle at Ft. Knox, providing for commander's CCF training. (This can interface with the Pre-Command Course also.)

9) With some extra work, a similar system could be established at Ft. Benning for the brigade's mechanized infantry TF.

This long-distance training option provides three main training benefits. First, it is cost effective, repetitive CCF training for digital staffs that does not make subordinate units in the field mere training aids for the staff. Second, and of prime importance, is the spreading of digital TTPs and experience throughout the Armor community. And last, this option provides vital, hands-on leader training for company grade officers and upper echelon NCOs. It is not a simple leap, but digital infancy is not a simple time.

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Autoloaders, Crew Size, and Ammunition Lethality

Dear Sir:

I have been a reader of *ARMOR* for almost a quarter of a century and have never been moved to write a letter, until I received the July-August 1995 issue. 1LT Todd R. Brannon's letter entitled "Autoloaders — Thanks, But No Thanks" made me an offer that I cannot refuse.

I wish to bring to the forefront the ongoing debate regarding the application of technology to the Armor Force. Neither the Threat, nor technology, are standing still. The technology debates and decisions of today will affect events for the next two decades. My discussion will focus upon lethality in general, and specifically guns, autoloaders, and ammunition.

The following comments refer to lethality in general. While serving in the 11th ACR in USAREUR throughout the late seventies, "they" said that our Sheridan and M60A1 weapon systems would defeat the threat across the border. They lied. Upon leaving active duty, and for the last 14 years as a member of the acquisition community, and now Corps, I have been intimately involved in tank lethality, helping to correct the lie. The ongoing debate, of which the autoloader is part, needs to address two dynamic issues: the Threat and the application of evolving technology to counter that Threat. The task is to decide what is necessary and possible, not just what would be "neat to have." In any technology discussion, there will be those that resist change, as happened with repeating carbines and mechanization.

In the area of guns, the current debate has narrowed down to 120mm vs. 140mm, if one accepts the fact that electric armaments will not mature in time for M1A3. The bore size has relatively small importance compared to the chamber volume. The last such debate took place regarding the 105mm and 120mm. The upgun to 120mm was, as it should have been, Threat-driven. There were those that opposed 120mm for a number of reasons,

primarily stowed load. Notice that I did not say stowed kills; there is a difference. My stowed load on the M60A1 was 63 rounds, but my stowed kills against a frontal tank at a reasonable range was zero. One may ask how the results of DESERT STORM would have been different if we stayed with the 105mm.

The development of a 140mm armament system, (XM291 Gun, XM91 Autoloader, XM964 APFSDS-T, XM965 MP-T, and Modified M1A1 Fire Control System), began in 1985. This effort, even then, was Threat-driven. Upon suspension of the 140mm work for political reasons in 1992, (120mm XM291 continues), the feasibility of the system was proven. An operational demonstrator vehicle remains at the Aberdeen Test Site as an asset for further testing. As a result of this technology leap, a quadrilateral agreement was reached between the U.S., United Kingdom, France, and Germany, which harmonizes the technical parameters of such a system. One of the parameters is the 140mm ammunition, which leads to a discussion of autoloaders.

Since the beginning of time, man has continuously developed tools and machines to either make work easier, or to do more work in the same amount of time. An autoloader is such a device. Contrary to 1LT Brannon's opinion, technologists/engineers like Western Design and myself are not going to take away the fourth crewman. If the tank crew is reduced, it will be chiefly for two other reasons. The first reason would be the requirement to maintain force structure in light of manpower reductions. An autoloader would enable the same number of tanks to be operated with fewer crewmen. On the other hand, the fourth crewman could be removed from an autoloader-equipped vehicle and utilized to man additional tanks. The second, and to me more pressing reason, is a Catch 22 for the tank designer; "How can I meet my requirement to increase armor protection and reduce vehicle weight?" The most direct route to meet this requirement is to reduce the volume which must be protected by armor. If a crewman is removed from the turret, the crew compartment volume may be reduced. Drop down into the LeClerc turret; it's like a cockpit. Nice, it reminds me of my

Toyota MR2 — no wasted space, just a clean, high-performance design. An autoloader for the 120mm system represents a way for the tank designer to meet his protection and weight requirements. If the 140mm system is required to defeat the Threat, then an autoloader is also required. The reason is extremely simple; the XM964 APFSDS-T Cartridge is almost five feet long, weighs approximately 85 pounds, and will probably be a two-piece munition. I know that I, as a loader, would have difficulty passing the Tank Crew Gunnery Skills Test. Regardless of the caliber decision, I would propose keeping the fourth crewman, if physically possible from a vehicle design standpoint (someone is going to have to operate the vehicle computer system).

Finally, I would like to address ammunition. Along the lines of doing more with less, we wish to engage targets at the longest possible ranges. We are able to detect, classify, and identify targets at longer ranges, under varied conditions, with improved target acquisition systems and situation awareness. What has not kept pace is the ability to hit and kill targets at those extended ranges. What we need is a smaller, more lethal, armored force with the capability of "One Shot-One Kill." The state of the art in gun-launched electronics is such that what was not possible a few years ago can be done today. Smart munitions are coming, (*ARMOR*, March-April 1995). Their use is proliferating, and they may be the only life extension for the 120mm system. Smart munitions have applications in mortars and artillery; why not tanks?

In summary, these are interesting times, with interesting opportunities. Once again, the Threat and technology are dynamic, and must be addressed. Let's debate freely and choose wisely, because it will be our brothers, sons, and grandsons manning the M1A3 and the FMBT. Whatever is decided, let's not lie to them.

"Steel On (And Thru) Target!"

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